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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
MOREHEAD, JOHN H

ART UNIT	PAPER NUMBER
2622	

MAIL DATE	DELIVERY MODE
11/01/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/749,340	BEA ET AL.
	Examiner	Art Unit	
	John Morehead	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>20 July 2007</u>.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-12</u> is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1,6,7 and 12</u> is/are rejected.

7)☒ Claim(s) <u>2-5 and 8-11</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>30 December 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☒ All b)☐ Some * c)☐ None of:

   1.☒ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments with respect to claims 1 and 7 have been considered but

are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

3.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

        1.   Determining the scope and contents of the prior art.
        2.   Ascertaining the differences between the prior art and the claims at issue.
        3.   Resolving the level of ordinary skill in the pertinent art.
        4.   Considering objective evidence present in the application indicating
                obviousness or nonobviousness.

4.   Claims 1, 6, 7, and 12 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Brehmer et al US 2003/0133627 in view of Yakovlev US 6,670,904.

5.   Re claim 1, Brehmer discloses an image sensor (fig. 1 element 101) using

correlated double sampling technology (fig. 1 element 130) which outputs data of an

object by using difference between a reset voltage signal and a data voltage signal of a

unit pixel, comprising: a plurality of unit pixels (fig. 1 element 110) arranged in a matrix,

each outputting the reset voltage (figure 1 element 111) signal and the data voltage

signal (fig. 5 element 521); a plurality of clamping means (fig. 5 element 150), each

coupled to a corresponding one of said unit pixels (each clamp circuit is coupled to a

corresponding one of said unit pixels because the clamp circuit is coupled to each

column output of every unit pixel, therefore inherently the clamp circuit is coupled to a

corresponding one of said unit pixels) for clamping up the reset signal to a

predetermined voltage level (para 0031); and a voltage controlling block (fig. 9c element

152) for adjusting voltage level supplied to a gate of each of said clamping means (para

0035).

Brehmer fails to disclose wherein the voltage controlling block includes a D/A

converting means for receiving a digital code and outputting an analog voltage used to

adjust the voltage level. However, Yakovlev discloses a double ramp ADC for CMOS

sensors including a DAC, or digital to analog converter, which receives digital code and

generates an analog ramp voltage (Yakovlev fig. 5 element 406, col. 6 lines 29-31).

Therefore taking the combined teachings Brehmer and Yakovlev, as a whole, it

would have been obvious to one of ordinary skill in the art to modify Brehmer CMOS

sensor with over saturation abatement to incorporate Yakovlev's digital to analog

converter within the clamping circuit of Brehmer to provide a means for adjusting the

voltage level (Yakovlev, col. 6 lines 25-47).

Re claim 6, the combined teachings of Brehmer and Yakovlev, as a whole,

further discloses the image sensor as recited in claim 1, wherein each clamping means

is included in each column of the matrix and one voltage controlling block is in whole

chip of one image sensor (Brehmer, fig. 5, also see rejected claim 1).

Re claim 7, the combined teachings of Brehmer and Yakovlev, as a whole,

further discloses an image sensor using correlated double sampling technology which

outputs data of an object by using difference between a reset voltage signal and a data

voltage signal of a unit pixel, comprising: a plurality of unit pixels arranged in a matrix,

each outputting the reset voltage signal and the data voltage signal; a plurality of

clamping units, each coupled to a corresponding one of said unit pixels for clamping up

the reset signal to a predetermined voltage level; and a voltage controlling block for

adjusting voltage level supplied to a gate of each of said clamping units, wherein the

voltage controlling block includes a D/A converter for receiving a digital code and

outputting an analog voltage used to adjust the voltage level (claim limitations have

already been discussed and rejected, see claim 1).

Re claim 12, the combined teachings of Brehmer and Yakovlev, as a whole,

further discloses the image sensor as recited in claim 7, wherein each clamping unit is

included in each column of the matrix and one voltage controlling block is in whole chip

of one image sensor (claim limitations have already been discussed and rejected, see

claim 6).

Allowable Subject Matter

6.   Claims 2-5 and 8-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7.   The following is an examiner's statement of reasons for allowance: Claim 2 further recites "The image sensor as recited in claim 1, wherein the voltage controlling block includes: a first switch coupled between the D/A converting means and the clamping means and controlled by a first control signal; *and a second switch coupled between a ground voltage and each clamping means and controlled by the inverse first control signal*." The prior art of record fail to anticipate or render obvious the above limitations as claimed. The same applies to claims 3-5 and claims 8-11.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

8.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Morehead whose telephone number is 571-270-1183. The examiner can normally be reached on Monday - Friday (alt) 7:30-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc Yen Vu can be reached on 571-272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JM

NGOC YEN VU
SUPERVISORY PATENT EXAMINER